



## THE NARG MISSION STATEMENT

The mission of NARG is to provide a forum for individuals who possess a passionate interest in fossils. In the Pacific NW, we are responsible for a wealth in fossil record.

We document our findings and strive to improve communication for scientific contribution and public benefit.

Our goal is to develop an affiliation of fossil enthusiasts working together, to continue research, perform site investigation, have fun, and contribute to the growth and development of an active, premier group of avocational paleontologists.

Our belief: The total can be greater than the sum of its parts: By working together, we can create an informative, educational experience for a dynamic group of people. Our individual pursuits and interests will contribute and enhance scientific knowledge and the public record.

If your interests are research and exploration, collection or preparation, we welcome your participation and invite your enthusiasm!

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# NARG Newsletter

North America Research Group

[www.narg-online.com](http://www.narg-online.com)

Pacific Northwest Paleontology, Paleobotany, and Geology

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## NARG's Inaugural Newsletter

The genesis of NARG began in 2000 with Andrew and Steven Bland. The Bland brothers went out on a road trip through Central Oregon that carried them through Mitchell, Fossil, Spray, Shaniko and other turn of the century towns. At some point during the trip the two brothers decided to stop and explore some of the sedimentary layers of rock near Condon, OR. Right off they located a bone, fish vertebrae and leaf impressions—they were hooked. Before that trip ended they hit the Painted Hills area for leaf impressions and then onto Fossil, just behind the high school, for even better leaf impressions. After they returned home they were anxious for the next trip out with a more concentrated focus on digging through Oregon's geologic record. As time wore on they met other enthusiastic, like minded friends who accompanied them on their trips. When time did not allow for multi-day excursions they spent their weekends col-

lecting in road cuts near Skamokawa, Porter and KM Mountain in southwest Washington. These locales produced many fine concretions containing crabs, wood, bone and small sea creatures. It didn't take much time for the brother's to accumulate enough



**Pulalius vulgaris, outstanding ventral specimen that shows great abdomen and mouth part detail.**

concretions in their respective garages that cars were no longer able to park inside. Initially, these "crab balls" languished. The brothers used several methods to "pop" them open—from

soaking them in water for several days and then freezing them to beating them with sledgehammers. Finally, the proper technique was devised and, ultimately, with Andrew's natural preparation skill of the specimen, the amazing creatures were revealed—literally captured in time.

Our goal at NARG is to provide you with information on the fossil record for the states of Oregon and Washington. This newsletter is one of several ways we accomplish this goal. NARG also details general information on the geologic history of the Pacific NW as well as information on fossil bearing formations. We are geared toward paleontology but you must have some understanding on the regional geology if you intend on collecting fossils.

We searched high and low for a regional group or club interested in paleontology (cont. on page 2)

## The Taxonomy Report

Submitted by Aaron Currier

I'd like to begin this report by explaining that my interest in the systematics of the fossil record developed years after collecting numerous fossil specimens and decades after collecting my first agate on a gravel road. I realized a few years back that my fossil collection had some scientific value, but it never would be recognized without proper record keeping. I took notes on field

trips, researched through identification books and other professional publications, and visited with professionals in the field to develop a reasonable accounting of my collection.

One of the important aspects of my research is not only the labeling of specimens with accurate scientific binomial names, but

understanding how a species fits into the hierarchal tree of life... otherwise known as the scientific system of classification, or taxonomy. In future issues of the "Taxonomy Report" we will take a look at how species fit together, both in relation to other related species, as well as their ancestry. Continued on page 3...

# NARG's Inaugural Newsletter ...continued from page 1



NARG outing to southwest Washington; Fossil Creek

but all we came up with were rock and mineral organizations. After a quick count we found that we knew enough people and started our own fossil enthusiast group —the only one in southwest Washington and Oregon. We meet once a month and have scheduled collecting trips and workshops. A minimum of once a month NARG members get together and collect at a predetermined locale; often on multi-day trips around the area. These trips are a wonderful way to learn and share experiences, camaraderie and explore what our geologic past has to offer. NARG members have collected as far away as northern Colorado and as far south as

Tucson, AZ.



Every trip finds a fossil record worth keeping.

We invite you to join us at the next NARG meeting, held the first Wednesday of every month at the Rice Museum in Hillsboro, OR.

Visit our web page and check out the "Membership" section for more information on how you can become a NARG Member and participate in meetings, trips, and workshops. The NARG web site also has a fossil forum where you can post questions and learn from the seasoned NARG members. See you there!



*"We probably wont find all the species of crabs but we'll enjoy trying ..."*

## Why "Just Crabs"?

First, not everyone in our group is smitten with fossil crabs. Many members have different areas of interest, and I respect that, but the only reason I'd keep a gastropod is if a hermit crab was inside. Actually I value every fossil I find but over the past couple of years crabs have really grown on me and other members of our group. When I first started collecting I wasn't really happy with the types of fossils found here in the Pacific NW and I'd travel to other states to collect many of their fine fossils. Of course these

trips were limited due to the cost and time so I continued to collect marine formations in Oregon and Washington but I was really getting tired of concretions. It wasn't until I was able to prepare fossils from the concretions that my affinity for crabs began to grow.

The majority of the crab we collected came from the Lincoln Creek Formation in SW Washington with the predominant crab being the *Pulaluis vulgaris*. As we collected other formations we started finding others like the tiny *Palaeopinixa rotundus* or the bug like

*Carinaranina schencki*.

We began to research crabs, shrimp, and lobsters and found they are widely distributed and divers in the Pacific NW. Although not nearly complete our list of fossil decapods that can be found number over 80 different species ranging in time from Cretaceous to Pleistocene.

We probably wont find all the species of crabs but we'll enjoy trying and hopefully find something new along the way.

Over and out,  
Andrew Bland

## Trip Report for 5/04

Thursday May 13th, NARG members traveled to Wahkiakum County in SW Washington to search for Eocene marine fossils in the Lincoln Creek formation. We tried a new entry point into a mountainous drainage system. In an attempt to save time and effort we came in from above, off of the end



Steven and Andrew digging for concretions

of a closed logging road, instead of the usual four-hour

hike up the creek. The first mile was an easy downward walk to the end. From there on we had to bushwhack 1800 feet down a very steep ravine, covered in dense brush and tangled, felled trees with running water and slick rock underneath. It was a trial, even the three dogs whined as they struggled to get through. We did get down though, and after a short sit in a chair, some cold libation, our sense of humor and energy came back. We

saved about an 1 1/2 hours in time, but we agreed that the long walk in from the bottom was preferable.

Our campsite was on a flat shelf of rock at the base of a 10 foot high waterfall with a deep pool at its base. The cliffs all around were festooned with vibrant green plant life of which I could only identify some. When the sun came out and back-lit them it looked like some primordial jungle. Few people have (cont. on page 3)

# The Taxonomy Report ...continued from page 1

This first column, however, we need to look at a couple of definitions. What's the difference between systematics, cladistics, taxonomy, and even classification? We've probably all heard these words listening to professionals speak, but what do they mean? Do the terms have different meanings? Here's the answer.

**Systematics:** The field of biology that deals with the diversity of life. Systematics is usually divided into two areas -- phylogenetics and taxonomy.

**Cladistics:** The systematic classification of groups of organisms on the basis of the order of their assumed divergence from ancestral species, also referred to as cladistic phylogenetics. For a biological classification system to be most useful, it should reflect current ideas about evolutionary relationships among the creatures it organizes into groups. Organizing creatures into groups is usually based on shared anatomical or biochemical features. Determining which features reveal what about evolutionary relatedness falls under the discipline of phylogenetic systematics.

**Taxonomy:** The science of naming and classifying organisms. Taxonomy has two basic objectives: 1) to serve as a basis for generalization in comparative studies and, 2) to serve as an information storage system. The system of classification used by biologists today is based on a hierarchical scheme devised by

Swedish naturalist Carl von Linnæus. Arranged from the broadest, most inclusive category, to the narrowest, most exclusive category, these taxa are: Kingdom, Phylum, Class, Order, Family, Genus, and Species.

**Classification:** the act of distributing things into classes or categories of the same type.

One can see how they are similar, but different definitions. However, they are all interconnected.

The next step in classifying specimens is to find reliable sources to give names for the various taxa. I've run into many instances where heirarchal name assignments contradict each other, particularly with crustaceans. I've seen Barnacles (*Balanus*) listed with any one of four different names for their order and Cirripedia in any one of four levels of classification!

I know a crab is a crustacean and a decapod, but is the Class name officially Malacostraca? What does Crustacea refer to anyway? We'll answer this in the next issue.

For now, it is important NARG adopt a standard resource for the assignment of taxonomical names to the specimens we collect. There are countless sources on the internet that vary in assignment of names, especially in the family, order and class levels of hierarchy. It's difficult to know which is accurate as well as personally picking one arbitrarily.

If you haven't found this in your online research yet, I believe this to be the best source for valid taxonomy because it is their mission. It's called the Interagency Taxonomic Information System, (ITIS). Visit their website, [www.itis.usda.gov](http://www.itis.usda.gov) to search any name. Although the list does not include many fossil species, most families are recorded. For the connection from genus or species to family, visit the Peabody Museum at Yale University at <http://george.peabody.yale.edu/ip/>. They have a huge database of fossils and identify the family and order names.

Regardless of what happens to your collection when you're gone, it is important that the next curator knows what you know. Take notes, keep them with your collected material, then in your spare time, have a little fun with research.

*"I've seen Barnacles (*Balanus*) listed with any one of four different names for their order and Cirripedia in any one of four levels of classification!"*

Andrew Bland's latest prep along with his comments:

"I finally got the *Aturia* group finished and have attached a picture."

Cigarette: 20  
Prep Time: 10 hours  
Abrasive: 1 lb  
Spilling acid on your hand trying to get a finish on 4 jeweled *Aturia*: Priceless



# Trip Report for 5/04 ...continued from page 2

been in here judging by the lack of any trash or fire-rings. After a good meal we filtered water from the creek to replenish stores. We hit the sack early and slept like logs with the "white noise" of the falls in the background.

Friday May 14th- Morning temperatures: air=42d., water=45d. After breakfast we climbed around the falls and dug reworked concretions out of the creek bed and cliff exposures. Some of these were as big as basketballs and difficult to split with many blows from the crack-hammers. At the base of one 200 foot cliff, nearly every concretion had a *Ranina ranina* crab. Also

found were clams, gastropods with barnacles attached, dentaliums and petrified wood.

We had a great dinner around our campfire with members sharing gourmet treats they had humped in. We talked about our day's finds and the beauty of this remote mountain area. The dogs seemed to be enjoying themselves and were our constant companions.

Saturday May 15th-Morning temperatures: air=46d., water=45d. We had a light breakfast and broke camp. We sorted the fossils into those we wanted to pack out and others we cached. This is the first

time my backpack was heavier coming out then going in. The route out is a wandering path crossing and re-crossing the creek around and over logjams, mudslides and dense underbrush. In the creek below more *Ranina* and *Pulalius* are found. There are many "rub" trees along the banks, where Deer and Elk have polished their antlers. With slick-rock and mud underfoot, some members used two walking sticks for stability. It is hard enough traveling through this area without the heavy packs. Fortunately, nobody was injured and we were out to a road in good time.



Humans in attendance: Bill Sullivan, Jerry Rawdon, Steven Bland, Andrew Bland

Dogs in attendance: Frank, Victor, and Steve





# NARG

North America Research Group

NARG meets the first Wednesday of every month at the following location:

Rice Northwest Museum of Rocks & Minerals  
26385 NW Groveland Drive  
Hillsboro, OR 97124

Fax: 503-647-2418

E-mail: [abland@narg-online.com](mailto:abland@narg-online.com)

See you there!

**vini, vidi, fossium**

## Oregon

### Geologic Info

The land we see today in the Pacific NW is the result of the breakup and collision of giant continents, the rise and fall of ancient ocean basins and lakes, uplift and wearing down of mountain ranges, floods of molten lava, and continental glaciers of the Ice Ages.

The sedimentary deposits from the ancient lakes and seabeds that covered the Pacific NW provide a fossil record dating back more than 500 million years.



# Paleontology and geology of Oregon

Credits to The Paleontology Portal

**The Precambrian:** During the Precambrian, the area now occupied by Oregon was deep ocean, and no rocks from the Precambrian have been preserved anywhere in the state.

**The Paleozoic:** Throughout much of the early Paleozoic (Cambrian through Silurian) what is now Oregon was covered by the sea, and no rocks from these time intervals have been preserved anywhere in the state. During the middle and late Paleozoic (Devonian through Permian), tectonic activity resulted in a series of volcanic islands in the area that has become Oregon. Limestones containing fossils of corals, brachiopods, and other marine animals provide evidence of the coral reefs and lagoon environments that also formed at this time, and plant fossils indicate the presence of nearby terrestrial environments.

**The Mesozoic:** Shallow seas persisted over most of state through the Mesozoic. Oysters, corals, and snails were important members of the marine

communities during this time interval. Vertebrates are represented by fossil fragments of pterosaurs and marine reptiles such as ichthyosaurs.

**The Cenozoic:** Fossils of turreted and fig shells (snails) indicate that warm-water conditions persisted into the early Cenozoic (Tertiary) over part of Oregon. Conditions became cooler and drier by the middle Tertiary, and marine organisms similar to modern species inhabited the waters off the coast. Forests of oak and alder were common, and mammals such as horses, camels, deer, and cats, as well as extinct gomphotheres (early elephants) and bear-dogs wandered the landscape. The Coast Range and the Cascades began to rise as a result of tectonic activity during the Tertiary. Later in the Cenozoic (Pleistocene), large ice caps covered the mountainous regions of the state. Lowland and coastal regions were covered by a diversity of environments, including forests, savanna, and arid plains. The Cascade volcanoes continued to erupt periodically throughout the late

Cenozoic.



-  Quaternary
-  Tertiary
-  Cretaceous
-  Jurassic
-  Triassic
-  Permian
-  Carboniferous
-  Devonian
-  Silurian
-  Ordovician
-  Cambrian
-  Precambrian